What is claimed is:

1. A medical device for delivering a pulse waveform to a target site of a patient, comprising:

an energy storage device storing electrical energy;

a plurality of electrodes electrically coupled to the energy storage device;

a plurality of switching elements coupled to the plurality of electrodes; and

control circuitry, coupled to the plurality of switching elements, selectively switching the plurality of switching elements between a first state and a second state to direct discharge of the stored energy to be simultaneously output at selected electrodes of the plurality of electrodes to generate discrete sequential resultant output pulses across multiple pathways, the discrete sequential resultant output pulses generating a multi-directional waveform at the target site.

2. The device of claim 1, wherein the multi-directional waveform generates a stimulation field that rotates stepwise in one of a clockwise direction and a counter-clockwise direction.

3. The device of claim 1, wherein the multi-directional waveform generates a stimulation field that rotates stepwise in one of a first direction corresponding to the stimulation field alternating between a clockwise direction and a counter-clockwise direction, and a second direction corresponding to the stimulation field randomly alternating between a clockwise direction and a counter-clockwise direction.

4. The device of claim 1, wherein the discrete sequential resultant output pulses generate the multi-directional waveform by one of rotating in a clockwise rotation followed by a counter-clockwise rotation, alternating between clockwise and counterclockwise rotations, and randomly rotating.

5. The device of claim 1, further comprising a smoothing element positioned in series with the energy storage device.

6. The device of claim 5, further comprising a diode positioned in parallel with the smoothing element.

7. The device of claim 5, further comprising a second energy storage device positioned between the smoothing element and the plurality of switching elements.

8. The device of claim 1, wherein the plurality of electrodes include a first electrode positioned within a right ventricle, a second electrode positioned within a superior vena cava, and a third electrode positioned within a coronary sinus.

9. The device of claim 1, further comprising a housing portion housing the energy storage device, the plurality of switching elements and the control circuitry, wherein the plurality of electrodes include a first electrode positioned within a right ventricle, a second electrode positioned along the housing portion, and a third electrode positioned in one of a coronary sinus and a coronary vein.

10. The device of claim 1, wherein the plurality of electrodes include one of an intracardiac electrode, an intravenous electrode, an epicardial electrode, a subcutaneous electrode a submuscular electrode, a cutaneous electrode, and a transcutaneous electrode.

11. The device of claim 1, wherein the control circuitry generates a delay of the simultaneous switching for a predetermined time period between generation of each of the discrete sequential resultant output pulses.

12. The device of claim 11, wherein the generation of the delay is associated only with pairs of switching elements of the plurality of switching elements to be switched between the first state and the second state.

13. The device of claim 11, wherein the multi-directional waveform generates a stimulation field that rotates stepwise in one of a clockwise direction and a counter-clockwise direction.

14. The device of claim 11, wherein the multi-directional waveform generates a stimulation field that rotates stepwise in one of a first direction corresponding to the stimulation field alternating between a clockwise direction and a counter-clockwise direction, and a second direction corresponding to the stimulation field randomly alternating between a clockwise direction and a counter-clockwise direction.

15. The device of claim 11, wherein the discrete sequential resultant output pulses generate the multi-directional waveform by one of rotating in a clockwise rotation followed by a counter-clockwise rotation, alternating between clockwise and counterclockwise rotations, and randomly rotating.

16. The device of claim 11, further comprising a smoothing element positioned in series with the energy storage device.

17. The device of claim 16, further comprising a diode positioned in parallel with the smoothing element.

18. The device of claim 16, further comprising a second energy storage device positioned between the smoothing element and the plurality of switching elements.

19. The device of claim 11, wherein the plurality of electrodes include a first electrode positioned within a right ventricle, a second electrode positioned

within a superior vena cava, and a third electrode positioned within a coronary sinus.

20. The device of claim 11, further comprising a housing portion housing the energy storage device, the plurality of switching elements and the control circuitry, wherein the plurality of electrodes include a first electrode positioned within a right ventricle, a second electrode positioned along the housing portion, and a third electrode positioned in one of a coronary sinus and a coronary vein.

21. The device of claim 11, wherein the plurality of electrodes include one of an intracardiac electrode, an intravenous electrode, an epicardial electrode, a subcutaneous electrode a submuscular electrode, a cutaneous electrode, and a transcutaneous electrode.

22. The device of claim 1, wherein the multi-directional waveform has a duration approximately equal to 8.3 ms.

23. A method of delivering a pulse waveform to a target site of a patient, comprising:

sensing cardiac signals;

identifying a predetermined rhythm in response to the sensed signals; and

simultaneously switching a plurality of switching elements between a first state and a second state to direct discharge of stored energy to be simultaneously output across multiple electrode paths to generate discrete sequential resultant output pulses in response to the identified predetermined rhythm, the discrete sequential resultant output pulses forming a multi-directional waveform at the target site.

24. The method of claim 23, wherein the multi-directional waveform generates a stimulation field that rotates stepwise in one of a clockwise direction and a counter-clockwise direction.

25. The method of claim 23, wherein the multi-directional waveform generates a stimulation field that rotates stepwise in one of a first direction corresponding to the stimulation field alternating between a clockwise direction and a counter-clockwise direction, and a second direction corresponding to the stimulation field randomly alternating between a clockwise direction and a counter-clockwise direction.

26. The method of claim 23, wherein the discrete sequential resultant output pulses generate the multi-directional waveform by one of rotating in a clockwise rotation followed by a counter-clockwise rotation, alternating between clockwise and counterclockwise rotations, and randomly rotating.

27. The method of claim 23, wherein the plurality of switching elements are associated with electrodes including a first electrode positioned within a right ventricle, a second electrode positioned within a superior vena cava, and a third electrode positioned within a coronary sinus.

28. The method of claim 23, wherein the plurality of switching elements are associated with electrodes including a first electrode positioned within a right ventricle, a second electrode positioned along a device housing portion, and a third electrode positioned in one of a coronary sinus and a coronary vein.

29. The method of claim 23, wherein the plurality of switching elements are associated with electrodes including one of an intracardiac electrode, an intravenous electrode, an epicardial electrode, a subcutaneous electrode a submuscular electrode, a cutaneous electrode, and a transcutaneous electrode.

30. The method of claim 23, further comprising generating a delay of the simultaneous switching for a predetermined time period between generation of each of the discrete sequential resultant output pulses.

31. The method of claim 30, wherein the generation of the delay is associated only with pairs of switching elements of the plurality of switching elements to be switched between the first state and the second state.

32. The method of claim 30, wherein the multi-directional waveform generates a stimulation field that rotates stepwise in one of a clockwise direction and a counter-clockwise direction.

33. The method of claim 30, wherein the multi-directional waveform generates a stimulation field that rotates stepwise in one of a first direction corresponding to the stimulation field alternating between a clockwise direction and a counter-clockwise direction, and a second direction corresponding to the stimulation field randomly alternating between a clockwise direction and a counter-clockwise direction.

34. The method of claim 30, wherein the discrete sequential resultant output pulses generate the multi-directional waveform by one of rotating in a clockwise rotation followed by a counter-clockwise rotation, alternating between clockwise and counterclockwise rotations, and randomly rotating.

35. The method of claim 30, wherein the plurality of switching elements are associated with electrodes including a first electrode positioned within a right ventricle, a second electrode positioned within a superior vena cava, and a third electrode positioned within a coronary sinus.

36. The method of claim 30, wherein the plurality of electrodes include a first electrode positioned within a right ventricle, a second electrode positioned

along a device housing portion, and a third electrode positioned in one of a coronary sinus and a coronary vein.

37. The method of claim 30, wherein the plurality of switching elements are associated with electrodes including one of an intracardiac electrode, an intravenous electrode, an epicardial electrode, a subcutaneous electrode a submuscular electrode, a cutaneous electrode, and a transcutaneous electrode.

38. The method of claim 23, wherein simultaneously switching a plurality of switching elements between a first state and a second state comprises:

simultaneously generating a first pulse along a first vector and a second pulse along a second vector to generate a first resultant pulse;

simultaneously generating a third pulse along a third vector and a fourth pulse along the first vector to generate a second resultant pulse;

simultaneously delivering a fifth pulse along a fourth vector and a sixth pulse along the third vector to generate a third resultant pulse;

simultaneously delivering a seventh pulse along a fifth vector and an eighth pulse along the fourth vector to generate a fourth resultant pulse;

simultaneously delivering a ninth pulse along a sixth vector and a tenth pulse along the fifth vector to generate a fifth resultant pulse; and

simultaneously delivering an eleventh pulse along the second vector and a twelfth pulse along the sixth vector to generate a sixth resultant pulse, wherein the resultant pulses generate a multi-directional waveform at the target site.

39. A computer-readable medium having computer-executable instructions for performing a method, comprising:

sensing cardiac signals;

identifying a predetermined rhythm in response to the sensed signals; and

simultaneously switching a plurality of switching elements between a first state and a second state to direct discharge of deliver stored energy to be simultaneously output across multiple electrode paths to generate discrete sequential resultant output pulses in response to the identified predetermined rhythm, the discrete sequential resultant output pulses forming a multi-directional waveform at the target site.

40. An implantable medical device, comprising:

means for sensing cardiac signals;

means for identifying a predetermined rhythm in response to the sensed signals; and

means for simultaneously switching a plurality of switching elements between a first state and a second state to direct discharge of stored energy to be simultaneously output across multiple electrode paths to generate discrete sequential resultant output pulses in response to the identified predetermined rhythm, the discrete sequential resultant output pulses forming a multi-directional waveform at the target site.